

## **Cruz, Francisco**

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**From:**  
**Sent:** Friday, September 04, 2015 6:26 AM  
**To:** Cruz, Francisco  
**Cc:** Trulear, Brian; MacKnight, Evelyn  
**Subject:** permit application 1009337  
**Attachments:** Attachment 6.1 TMDL (1009337)-2.doc

Mr. Cruz,

I am writing to request that EPA issue an objection to a new NPDES draft permit, application 1009337. I'm not sure what the time limits are for EPA's general objections but the public comment period closes on 9/6.

The proposed operation includes discharges into Bull Creek, for which there are EPA approved Phase I TDS and TSS TMDLs. The TMDL section of the fact sheet uses the WLAs established by the Phase I report to determine that offsets are not required.

The Phase II TMDL report has now been finalized (but not yet approved by EPA) and includes a much lower mining TDS WLA :

Phase I TDS mining WLA: 117,033 kg/yr

Phase II TDS mining WLA: 44,902 kg/yr

The additional TDS wasteload (47,401.08 kg/yr) from the proposed operation is higher than the aggregate mining WLA in the Phase II report. Although the draft NPDES permit does not include offset requirements, DMLR did approve offsets in the CSMO part of the permit (see attached TMDL report). I assume the company will rely on these offsets once the Phase II report is approved.

I hope you'll be willing to review the associated TMDL report and consider the complete absurdity of the offset calculations. The biologic and chemical monitoring results from Fall of 2014, submitted in the permit application, indicate there are high TDS levels in the watershed leading to low VASCI scores. The draft permit is not protective of water quality. I urge you to object to the permit as drafted, request DMLR consider the Phase II WLAs, and provide feedback to DMLR that clarifies that the offsets are not acceptable.



## **6.1 PROBABLE HYDROLOGIC CONSEQUENCES DETERMINATION – TMDL ADDENDUM**

This operation proposes mining area in two separate TMDL watersheds: the Bull Creek watershed and the Levisa Fork watershed. The total permit area of this proposed project is approximately 220.98 of which about 10.05 will discharge into tributaries of the Levisa Fork and 210.93 will discharge into tributaries of Bull Creek. Each of these watersheds is addressed separately below:

### **Levisa Fork TMDL**

#### **Introduction**

The Black Diamond Company's operation proposes to be located along Knotty Poplar Fork and Poplar Creek and other, adjacent tributaries of Levisa Fork. Specifically, the Levisa Fork watershed has been designated as impaired, and an approved TMDL has been issued for *E. coli*, Benthic, and PCBs. This report is titled "*E. coli*, Phased Benthic, and Phased Total PCB TMDL Development for Levisa Fork, Slate Creek, and Garden Creek." Therefore, procedures are required for mining operations proposed within this watershed for Total Suspended Solids (TSS).

#### **Data Used for TSS Estimation**

There are two primary land use types for which estimations must be made for TMDL parameter loading: active mining and abandoned mine lands (AML). The applicant is aware that DMLR, based on regulatory requirements, assumes that active mining produces a TSS load of approximately 35 mg/L. Based on a flow of 0.8 gallons per minute, which was provided by DMLR, this is equivalent to a TSS load of 55.7 kilograms per year per acre, and this value will be used throughout for active mining areas.

The applicant proposes to use information contained within the TMDL report to find usable values for AML area loading. Table 10.1 from that report (found on page 10-6) lists the land use types found within the Levisa Fork watershed in units of hectares. AML is listed as 3,388.24 hectares which converts to an area of 8,372.51 acres.

Table 10.13 (page 10-22 in the report) lists the existing sediment loads for Levisa Fork by land use. AML is listed as having an existing sediment load of 13,226.56 metric tons per year. Using these values, the metric tons per hectare per year for AML areas can be calculated at 3.90 tons per hectare per year. As confirmation of methodology, Table 10.14 also gives this a value of 3.90 tons per hectare per year for AML.

For consistency with DMLR's methodology, the calculated numbers can be converted to kilograms per year per acre. The results of those calculations are that AML within this watershed produces, on average, 1,580 kilograms per year per acre of TSS.

### TSS loading for Proposed Mining Plan

The portion of the permit within the Levisa Fork watershed, as proposed, covers a total of 10.05 acres of land, all located along Poplar Creek and other adjacent tributaries of Levisa Fork. The proposed mine plan calls for area mining of the Upper Glamorgan, Blair, Eagle, Upper Eagle, and Clintwood seams. The mining operation has been carefully planned to avoid any impacts with USACE jurisdictional waters.

As outlined in other sections of the application, a portion of the proposed permit boundary is currently permitted under other permit numbers. Specifically, 18.67 acres currently permitted under PN. 1102030 are proposed to be relinquished to the proposed permit. As this permit is included in the TMDL report with Existing and Allocated Loads (See Table 11.2 on page 11-4), these areas will not be new sources of TSS. Therefore, the loads from these areas—calculated as active mining areas at 55.70 kilograms per year per acre—will be discounted.

Additionally, the application also notes that 19.90 acres of the proposed permit boundary is classified as re-mining of which 3.19 is within the Levisa Fork watershed. Therefore, the current condition could be classified as AML. In the course of mining and reclamation operations, these AML areas will be reclaimed to current standards. In addition, sediment control will be in place during appropriate phases of the mining operation which should reduce TSS loading in the interim. In order to be conservative, it can be assumed that mining these areas will reduce the loading from AML levels down to active mining levels. This would result in a Net reduction in TSS loading from these AML areas of 4,863 kilograms per year per acre. However, for the purposes of this addendum, AML areas will be treated similarly to the previously permitted areas, and will not be counted as a contributing area.

Therefore, the following calculations have been used to predict the loading that would result from this application:

AN. 1009337 Proposed Acreage =	10.05
Remining Area Acreage =	<u>- 3.19</u>
Net Load Contributing Area	6.86 acres
Active Mining Loading Rate	<u>x55.70 kg/yr/acre</u>
<b>Total Net TSS Loading</b>	<b>382 kg/yr</b>

### Minimization and Avoidance

It should be noted that the permit, as currently proposed, differs greatly from the original application planned for this project. The original mine plan proposed excess spoil material to be placed in several hollow fills around the perimeter of the operation. That material will now go into backfill areas, and into one large fill constructed on the crest of a pre-law fill along with five smaller fills. In addition, additional areas to the north and southwest were proposed to be mined, but limits on the availability of non-jurisdictional hollows would not allow sufficient spoil



disposal areas. In order to eliminate most of hollow fills and stay out of USACE jurisdictional streams, a very aggressive backfilling plan was required.

### Proposed Offsets

As shown above, reclamation of AML areas during the course of the proposed mining operation could be expected to significantly reduce long term TSS loading from these areas following remining and reclamation activities. This prediction is calculated based on information provided in the approved TMDL report, using conservative methodology.

Based on the availability of growth allocations in the Levisa Fork watershed, no offsets are proposed for the Levisa watershed.

### Waste Load Allocations

The approved TMDL report lists the final TMDL allocation scenario for the impaired Levisa Fork watershed in Table 11.1 which is found on page 11-3. Scenario 1 was chosen as the final scenario to be implemented. According to this document the Future Growth Waste Load Allocation (WLA) for sediment (TSS) may be available. However, the applicant is aware that up-to-date calculations are pending, and DMLR will subsequently make a determination as to whether the proposed operation falls within these limits.

### Best Management Practices

The approved TMDL report states that "The TMDL Implementation Plan (IP) describes control measures, which can include the use of better treatment technology and the installation of best management practices (BMPs), which should be implemented in a staged process." The applicant has identified six (6) methods and control practices that will be followed within and adjacent to the disturbed mining area. These BMP's are required to be followed either singularly or in combination. The following lists the six (6) methods, and a brief discussion of how they will be applied to the proposed mining operation:

- 1. Disturbing the smallest area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation.** The contemporaneous reclamation requirements of SMCRA will ensure that progressive backfilling and grading operations are on-going. Backfilled areas prepared for seeding during adverse climate conditions will be seeded with an appropriate temporary cover until permanent cover can be established. DMLR technical review will ensure that reclamation requirements are clearly defined in the Operation Plan.
- 2. Stabilizing the backfill material to promote a reduction in the rate and volume of runoff.** The steps taken in item 1 will help promote a reduction in the rate and volume of runoff. Also, where possible, the applicant will follow the provisions of the Appalachian Regional Reforestation Initiative (ARRI), in which the top four (4) to eight (8) feet of backfill material will be loosely graded. Below this level, all backfill will be placed consistent with normal operations and compacted as necessary to

maintain stability. These actions, along with timely revegetation will allow infiltration in that zone of backfill which should lower the rate and volume of runoff as compared to the current, pre-mining situation. Additionally, the drainage control plan and sediment control facilities will act to retard the flow of water from the permit area, and this delay should limit the introduction of TMDL loads into the stream.

3. **Diverting runoff away from disturbed areas.** This will primarily be accomplished by creating diversions along the perimeters of the fills prior to construction in order to limit the amount of surface water that can infiltrate the fills. It should be noted that this operation proposes to disturb across the ridgeline in most areas. Therefore, runoff from undisturbed upstream areas is very limited, but would pass through diversions and sediment control structures within the permit area.
4. **Directing water and runoff with protected channels.** The proposed drainage control plan demonstrates that surface runoff will be collected by diversion ditches with adequate lining to minimize erosion in accordance with SMCRA.
5. **Using straw, mulches, vegetative filters, and other measures to reduce overland flow.** In most areas, as discussed above, sediment basins and sumps along with the revegetation and backfilling methods will act to reduce overland flow. In addition, the on-bench basins will increase detention time, and have shown to be less likely to flow than in-stream embankment ponds.
6. **Reclaiming all lands disturbed by mining as contemporaneously as practicable.** The contemporaneous reclamation requirements of SMCRA will ensure that progressive backfilling and grading operations are on-going. Any variance from the time limitation proposed in the backfill and re-grading plan will require the approval of DMLR.

It should be noted that the compaction of backfill materials below the root growth medium, and diverting water away from the hollow fills should be particularly effective in lowering the Total Dissolved Solids (TDS) levels in runoff from the disturbed areas. This is because these methods should limit the infiltration of water into the backfill, which will reduce the amount of time any runoff is in contact with the rock surfaces.

#### Levisa Fork TMDL Conclusions

The approved TMDL report was carefully considered for analysis of this proposed operation. All values used to determine land use production of TSS on a per acre basis were derived using data from this report or using data provided by DMLR. The operation will reduce long term TSS loading by conducting the operation in accordance with required regulations (timely backfilling and revegetation, proper sediment control, etc.), remining and reclamation of existing AML areas within the proposed permit boundary, and other voluntary measures as outlined in the BMP portion of the approved TMDL.



Finally, the consideration of jurisdictional waters used in developing the mine plan of the proposed mining operation will significantly reduce the immediate stream impact. By eliminating hollow fill material in USACE jurisdictional streams, and eliminating all in-stream embankment ponds, this mining operation should have a much smaller, if any, immediate impact on the streams. This operation will allow for reclamation of approximately 3.19 acres of AML area within the permit boundary.

## **Bull Creek TMDL**

### **Introduction**

The Black Diamond Company's operation proposes to be located along Convict Hollow and other, adjacent tributaries of Bull Creek. The Bull Creek watershed has been designated as impaired, and an approved TMDL has been issued for aquatic life use impairment with the pollutants being identified as Total Suspended Solids (TSS) and Total Dissolved Solids (TDS). This report is titled "Bull Creek Draft Phased TMDLs for a Benthic Impairment Buchanan County, Virginia." Therefore, procedures are required for mining operations proposed within this watershed to account for the introduction of additional TSS and TDS through the mining process.

### **Data Used for TSS Estimation**

There are two primary land use types for which estimations must be made for TMDL parameter loading: active mining and abandoned mine lands (AML). The applicant is aware that DMLR, based on regulatory requirements, assumes that active mining produces a TSS load of approximately 35 mg/L. Based on a flow of 0.8 gallons per minute, which was provided by DMLR, this is equivalent to a TSS load of 55.7 kilograms per year per acre, and this value will be used throughout for active mining areas.

The applicant proposes to use information contained within the TMDL report to find usable values for AML area loading. Table 2.1 from that report (found on page 8) lists the land use types found within the Bull Creek watershed in units of hectares. AML is listed as 197.1 hectares which converts to an area of 487.04 acres.

Table ES-1 (page ES-9 in the report) lists the existing sediment loads for Bull Creek by land use. AML is listed as having an existing sediment load of 3,890.3 metric tons per year. Using these values, the metric tons per hectare per year for AML areas can be calculated at 19.74 tons per hectare per year.

For consistency with DMLR's methodology, the calculated numbers can be converted to kilograms per year per acre. The results of those calculations are that AML within this watershed produces, on average, 7,988 kilograms per year per acre of TSS.

### TSS loading for Proposed Mining Plan

The portion of the permit, as proposed, within the Bull Creek watershed covers a total of 211.01 acres of land, all located along Convict Hollow and other adjacent tributaries of Bull Creek. The proposed mine plan calls for area mining of the Upper Glamorgan, Blair, Eagle, Upper Eagle, and Clintwood seams. This is to include the construction of two new hollow fills and one fill to be placed over an existing pre-law fill. The mining operation has been carefully planned to avoid any impacts with USACE jurisdictional waters.

As outlined in other sections of the application, a portion of the proposed permit boundary is currently permitted under other permit numbers. Specifically, 18.67 acres currently permitted under PN. 1102030 are proposed to be relinquished to the proposed permit. As this permit is included in the TMDL report with Existing and Allocated Loads (See Table 11.2 on page 11-4), these areas will not be new sources of TSS. Therefore, the loads from these areas—calculated as active mining areas at 55.70 kilograms per year per acre—will be discounted.

Additionally, the application also notes that 19.90 acres of the proposed permit boundary is classified as re-mining of which 16.71 is within the Bull Creek watershed. Therefore, the current condition could be classified as AML. In the course of mining and reclamation operations, these AML areas will be reclaimed to current standards. In addition, sediment control will be in place during appropriate phases of the mining operation which should reduce TSS loading in the interim. In order to be conservative, it can be assumed that mining these areas will reduce the loading from AML levels down to active mining levels. This would result in a Net reduction in TSS loading from these AML areas of 132,549 kilograms per year per acre. However, for the purposes of this addendum, AML areas will be treated similarly to the previously permitted areas, and will not be counted as a contributing area.

Finally, 5.46 acres associated with haul roads are provided sediment control using sumps, and run-off from this area does not pass through any ponds or NPDES outfalls. Therefore, this area is also removed from consideration.

Therefore, the following calculations have been used to predict the loading that would result from this application:

AN. 1009337 Proposed Acreage =	211.01
Haul road excluded area =	- 5.54
PN. 1102030 Relinquishment Acreage =	- 18.67
Remining Area Acreage =	<u>- 16.71</u>
Net Load Contributing Area	170.09 acres
Active Mining Loading Rate	<u>x55.70 kg/yr/acre</u>
<b>Total Net TSS Loading</b>	<b>9,474 kg/yr</b>



### TDS loading for Proposed Mining Plan

The same areas as described in the TSS Loading section of this narrative would also potentially contribute to TDS loading. Therefore, the net load contributing area for TDS would also be 170.09 acres. Using DMME methodology with the assumed flow rate of 0.8 gpm for this watershed and a TDS concentration of 721 mg/L (previously provided by DMLR), a TDS loading rate of 1,147.4 kg/yr/acre was determined. Using this information, the total yearly TDS loading can be calculated as follows:

Net Load Contributing Area	170.09 acres
Active Mining Loading Rate	<u>x 1,147.4 kg/yr/acre</u>
<b>Total Net TDS Loading</b>	<b>195,161 kg/yr</b>

### Proposed Offsets

As described above, the applicant proposes to enter a "No Cost" Agreement with the Department to reclaim areas of pre-law highwall. These are shown more completely on the TMDL Map included in sections 21.2 and 21.5 of this application.

Using the EPA approved TMDL report; AML area contributes 7,988 kg/acre/yr while undisturbed forestland contributes 58.70 kg/acre/yr. Therefore, the conversion of AML land to forested land results in a reduction in TSS loading of 7,929.3 kg/acre/yr. It is calculated that reclaiming the 18.0 acres of AML lands should result in a reduction of TSS loading for Bull Creek of 142,727.4 kg annually. However, in order to be conservative, only fifty percent of these loading reductions are proposed as offset credit. Therefore, the completed No-cost AML reclamation project should achieve offset credits as follows:

TSS Loading Credit: 71,364 kg/yr

The following table compares the total loading the mining operation represents to the credits available due to completion of the No-Cost AML Agreement:

Application	TSS (kg/yr)
Mining Operation TMDL Loading	9,474
Offset Credit from AML Project	71,364

As can be seen from this comparison, the proposed offset credit for TSS is well above the anticipated TMDL loading.

Regarding TDS, an examination of TMDL reports that have been approved in Buchanan County identify loading for both TSS and TDS for various land use types, including mined lands and forested lands. These values can be used to calculate a ratio of TDS to TSS loading for each land use type. For this project, we have used the values for mined lands. The following specific ratios were obtained from the TMDL reports:

Garden Creek – 37:1

Russell Prater Creek – 25:1

Pawpaw Creek – 30:1

In other words and according to the TMDL reports, for every 1 kg/year of TSS that an acre of mine land contributes to the streams in Buchanan County that same acre contributes on average 31 kg/year of TDS.

Therefore, reclaiming mine land would also reduce TDS, on average, 31 kg/year for every 1 kg/year of TSS that is reduced. This ratio will be used in our subsequent calculations. From the TSS credit value of 71,364, it follows that the TDS credit would be at 2,212,284 kg/yr.

Application	TDS (kg/yr)
Mining Operation TMDL Loading	195,161
Offset Credit from AML Project	2,212,284

As can be seen from this comparison, the proposed offset credit is well above the anticipated TMDL loading.

#### Bull Creek TMDL Conclusions

The approved TMDL report was carefully considered for analysis of this proposed operation. All values used to determine land use production of TSS on a per acre basis were derived using data from this report or using data provided by DMLR. The operation will reduce long term TSS loading by conducting the operation in accordance with required regulations (timely backfilling and revegetation, proper sediment control, etc.), remining and reclamation of existing AML areas within the proposed permit boundary, and other voluntary measures as outlined in the BMP portion of the approved TMDL.

Finally, the consideration of jurisdictional waters used in developing the mine plan of the proposed mining operation will significantly reduce the immediate stream impact. By eliminating hollow fill material in USACE jurisdictional streams, and eliminating all but one in-stream embankment pond, this mining operation should have a much smaller, if any, immediate impact on the streams. This operation will allow for reclamation of approximately 16.71 acres of AML area within the permit boundary and 18.00 acres of AML outside the permit boundary which will result in the removal of approximately 6,250 feet of exposed pre-law highwall.